

CLAIMS

1. A film for a circuit board, wherein the following A layer is adjacent to the following B layer,

5 wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more, and

10 the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being roughened with an oxidizing agent.

15 2. A film for a circuit board, wherein the film comprises the following A layer, B layer and C layer, and has a layer structure in the order of C layer, B layer and A layer, wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a
20 decomposition temperature of 300°C or more,

the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being
25 roughened with an oxidizing agent, and

the C layer is a peelable support film.

3. A film for a circuit board, wherein the film comprises the following A layer, B layer and D layer, and has a layer structure in the order of D layer, B layer and A layer,
30 wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more,

the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being

roughened with an oxidizing agent, and

the D layer is a conductor layer.

4. The film for a circuit board as claimed in claim 3, wherein the conductor layer is an electroless copper-plated layer (D1 layer).

5. The film for a circuit board as claimed in claim 3, wherein the conductor layer comprises an electroless copper-plated layer (D1 layer) and a copper-electroplated layer (D2 layer).

6. A film for a circuit board, wherein the film comprises the following A layer, B layer and C layer, and has a layer structure in the order of C layer, B layer, A layer, B layer and C layer, wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more,

the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being roughened with an oxidizing agent, and

the C layer is a peelable support film.

7. A film for a circuit board, wherein the film comprises the following A layer, B layer and D layer and has a layer structure in the order of D layer, B layer, A layer, B layer and D layer, wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more,

the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which layer is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being roughened with an oxidizing agent, and

the D layer is a conductor layer.

8. The film for a circuit board as claimed in claim 7, wherein the conductor layer is an electroless copper-plated layer (D1 layer).

9. The film for a circuit board as claimed in claim 7, wherein the conductor layer comprises an electroless copper-plated layer (D1 layer) and a copper-electroplated layer (D2 layer).

10. A film for a circuit board, wherein the film comprises the following A layer, B layer, C layer, E layer and F layer, and has a layer structure in the order of C layer, B layer, A layer, E layer and F layer, wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more,

the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being roughened with an oxidizing agent,

the C layer is a peelable support film,

the E layer is a cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, and

the F layer is a copper foil.

11. A film for a circuit board, wherein the film comprises the following A layer, B layer, D layer, E layer and F layer, and has a layer structure in the order of D layer, B layer, A layer, E layer and F layer,
5 wherein

the A layer is a heat-resistant resin layer with a thickness of from 2 to 250 μm which is made of a heat-resistant resin having a glass transition point of 200°C or more or a decomposition temperature of 300°C or more,

10 the B layer is a roughenable cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, wherein the cured product is capable of being roughened with an oxidizing agent,

15 the D layer is a conductor layer,

the E layer is a cured resin layer with a thickness of from 5 to 20 μm which is made of a cured product of a thermosetting resin composition containing at least component (a) of an epoxy resin having two or more epoxy groups in a molecule and component (b) of an epoxy curing agent, and

20 the F layer is a copper foil.

12. The film for a circuit board as claimed in claim 11, wherein the conductor layer (D layer) is an electroless copper-plated layer (D1 layer).

25 13. The film for a circuit board as claimed in claim 11, wherein the conductor layer (D layer) comprises an electroless copper-plated layer (D1 layer) and a copper-electroplated layer (D2 layer).

30 14. A circuit board produced using the film for a circuit board as claimed in any of claims 1 to 13.

15. A method of making a circuit board, comprising:
roughening the roughenable cured resin layer (the B layer) of the film according to claim 1, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

16. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

5 claim 2, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

17. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

10 claim 3, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

18. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

15 claim 6, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

19. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

20 claim 7, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

20. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

25 claim 10, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.

21. A method of making a circuit board, comprising:

roughening the roughenable cured resin layer (the B layer) of the film according to

30 claim 11, and

forming a conductor layer on the resulting roughened roughenable cured resin layer.